

AMENDMENTS TO THE CLAIMS

LISTING OF CLAIMS:

Claim 1 (Currently amended). An enzyme having alcohol and aldehyde dehydrogenase activity comprising a recombinant polypeptide containing an amino acid sequence ~~selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8~~[[,]] ~~or~~ and amino acid sequences with at least 80% identity to ~~SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7 or SEQ ID NO: 8~~ said recombinant polypeptide ~~having alcohol and aldehyde dehydrogenase activity.~~

Claim 2 (Currently amended). An enzyme of claim 1 having alcohol and aldehyde dehydrogenase activity, wherein the recombinant polypeptide is a chimeric polypeptide including a combination of at least two amino acid sequences each of said sequences being selected from the group consisting of SEQ ID NO: 5, ~~SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8~~, and amino acid sequences with at least 80% identity to ~~SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7 or SEQ ID NO: 8~~[[,]] ~~said recombinant polypeptide having alcohol and aldehyde dehydrogenase activity.~~

Claim 3 (Previously presented). An enzyme of claim 1, wherein the enzyme includes at least two recombinant polypeptides in the form of a homodimer or a heterodimer.

Claims 4-8 (Previously cancelled).

Claim 9 (Currently amended). An enzyme produced by vector ~~selected from the group consisting of pSSA102R, pSSA'101R, pSSA"102, pSSB103R~~[[,]] ~~pSSAP B, pSSA/B101R, pSSA/B102R, pSSA/B103R, pSSB/A101R, pSSB/A102R, pSSB/A103R, pSScA2, pSScA21, pSScA22 and pSScB.~~

Claims 10-19 (Previously cancelled).

Claim 20 (Original). A process for producing an aldehyde product from a substrate which comprises incubating a reaction mixture containing an enzyme of claim 1 and said substrate wherein said substrate is selected from the group consisting of n-propanol, isopropanol, D-sorbitol and D-mannitol, and recovering the aldehyde product.

Claim 21 (Original). A process for producing a ketone product from a substrate which comprises incubating a reaction mixture containing an enzyme of claim 1 and said substrate wherein said substrate is selected from the group consisting of n-propanol, isopropanol, D-sorbitol and D-mannitol, and recovering the ketone product.

Claim 22 (Original). A process for producing a carboxylic acid product from a substrate which comprises incubating a reaction mixture containing an enzyme of claim 1 and said substrate wherein said substrate is selected from the group consisting of L-sorbose, D-glucose, D-fructose and L-sorbose, and recovering the carboxylic acid product.

Claims 23-24 (Previously cancelled).

Claim 25 (Currently amended). A process for producing 2-keto-L-gulonic acid which comprises:

(a) incubating a reaction mixture containing a substrate selected from the group consisting of D-sorbitol and L-sorbose, and a recombinant enzyme having alcohol and aldehyde dehydrogenase activity including a recombinant polypeptide containing an amino acid sequence ~~selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7, SEQ ID NO: 8~~ or ~~and~~ amino acid sequences with at least 80% identity to ~~SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7 or SEQ ID NO: 8~~, ~~said recombinant polypeptide having alcohol and aldehyde dehydrogenase activity~~, and

(b) converting the substrate to 2-keto-L-gulonic acid.

Claims 26-27 (Previously cancelled).

Claim 28 (Original). A process for the production of L-ascorbic acid from 2-keto-L-gulonic acid comprising obtaining 2-keto-L-gulonic acid by a process of claim 25 and transforming the 2-keto-L-gulonic acid into L-ascorbic acid.

Claim 29 (Currently amended). An enzyme according to claim 1 wherein the amino acid sequence is ~~selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7 and SEQ ID NO: 8.~~

Claim 30 (Currently amended). An enzyme having alcohol and aldehyde dehydrogenase activity encoded by a recombinant expression vector comprising a DNA sequence ~~selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4~~[[,]] or ~~and~~ DNA sequences which encode a polypeptide with at least 80% identity to ~~SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7 or SEQ ID NO: 8,~~ wherein the DNA sequence is functionally linked to one or more genetic control sequences and is capable of expression of an enzyme including at least one recombinant polypeptide having alcohol and aldehyde dehydrogenase activity.

Claim 31 (Currently amended). An enzyme having alcohol and aldehyde dehydrogenase activity encoded by a recombinant expression vector comprising a DNA sequence ~~selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4~~[[,]] or ~~and~~ DNA sequences which encode a polypeptide with at least 80% identity to ~~SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7 or SEQ ID NO: 8~~[[,]] ~~and having alcohol and aldehyde dehydrogenase activity.~~